

# 02.03 - STRUCTURES

## INDEX OF DRAWINGS



DRAWING NUMBER	DRAWING TITLE
S-001	INDEX OF DRAWINGS
S-002	BRIDGE DECK JOINTS PLAN AND INFORMATION CHART
S-003	ASPHALTIC PLUG JOINT DETAILS
S-004	PARAPET JOINT DETALS

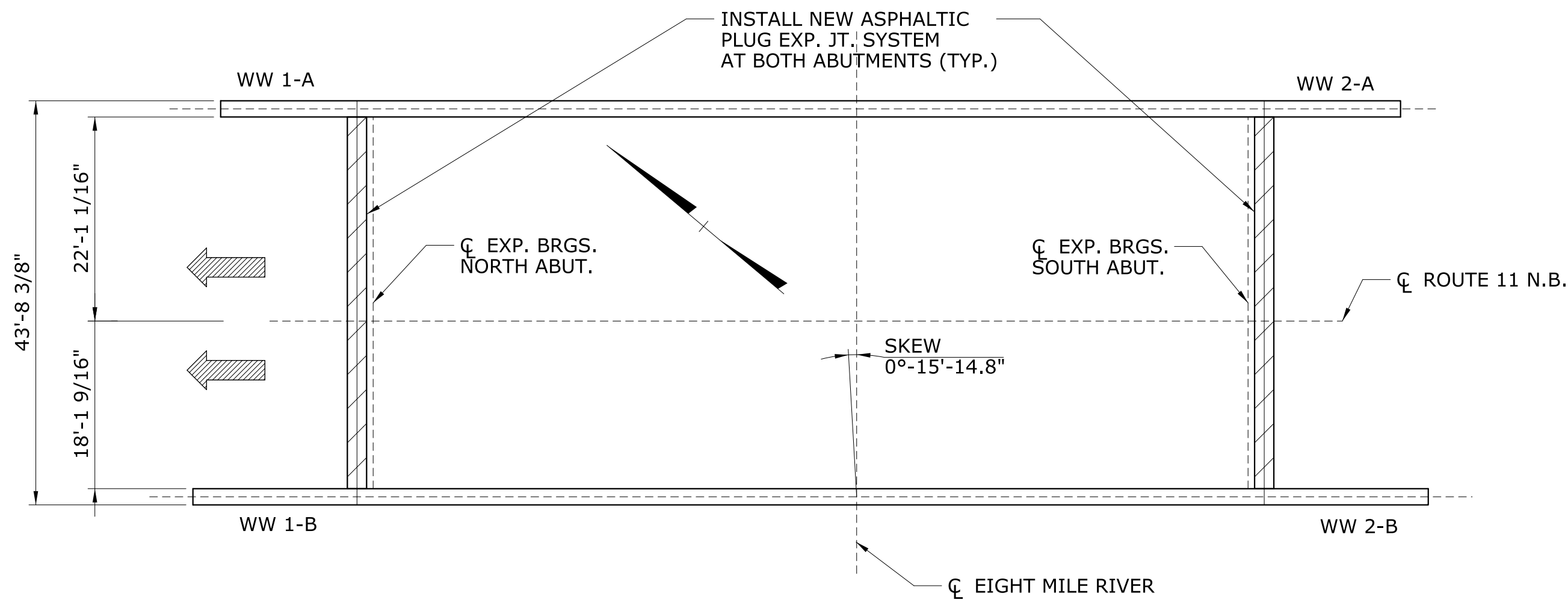
MILE POINT	BRIDGE NO.	CROSSING	TOWN
10.78	02393	ROUTE 11 NORTH BOUND OVER EIGHT MILE RIVER	SALEM
10.79	02394	ROUTE 11 SOUTH BOUND OVER EIGHT MILE RIVER	SALEM
13.09	02415	ROUTE 11 NORTH BOUND OVER WITCH MEADOW ROAD	SALEM
13.10	02416	ROUTE 11 SOUTH BOUND OVER WITCH MEADOW ROAD	SALEM

NOTE : FOR BRIDGE LOCATIONS, SEE HIGHWAY PLANS.

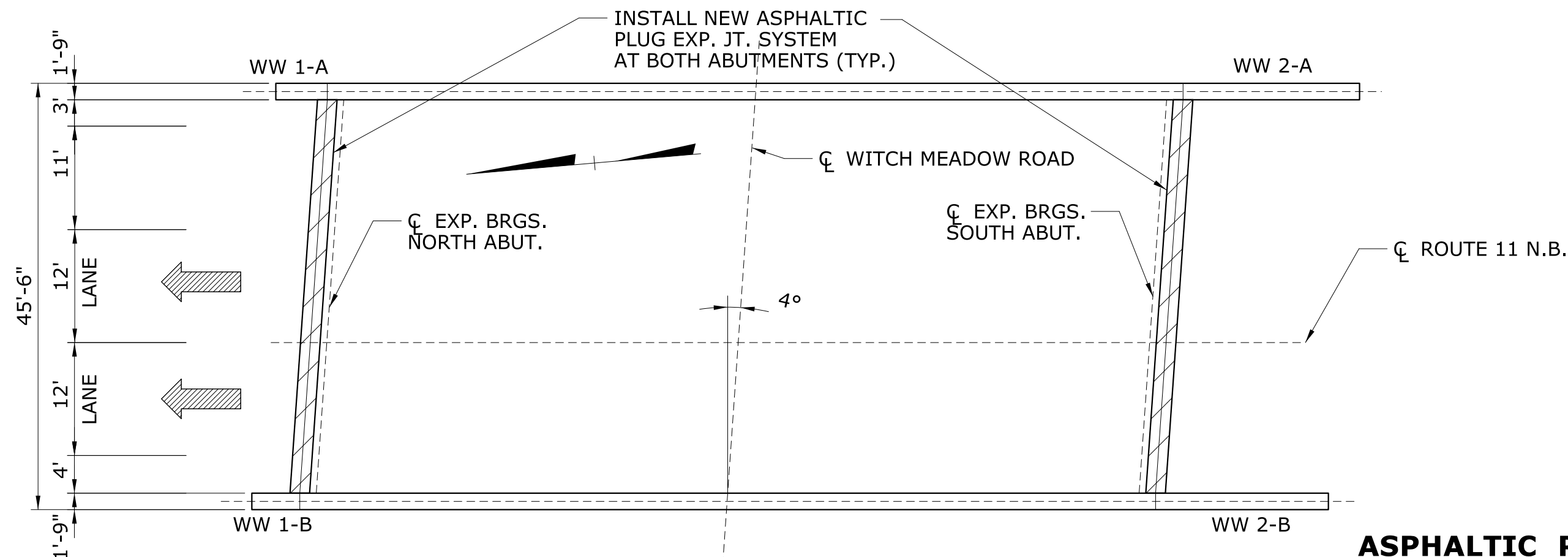
THE DESIGN APPEARS TO CONFORM TO APPLICABLE CRITERIA. APPROVAL IS NOT TO BE CONSTRUED TO MEAN THAT ALL ASPECTS OF THE DESIGN HAVE BEEN PERSONALLY CHECKED BY THE UNDERSIGNED.

TRANSPORTATION PRINCIPAL ENGINEER

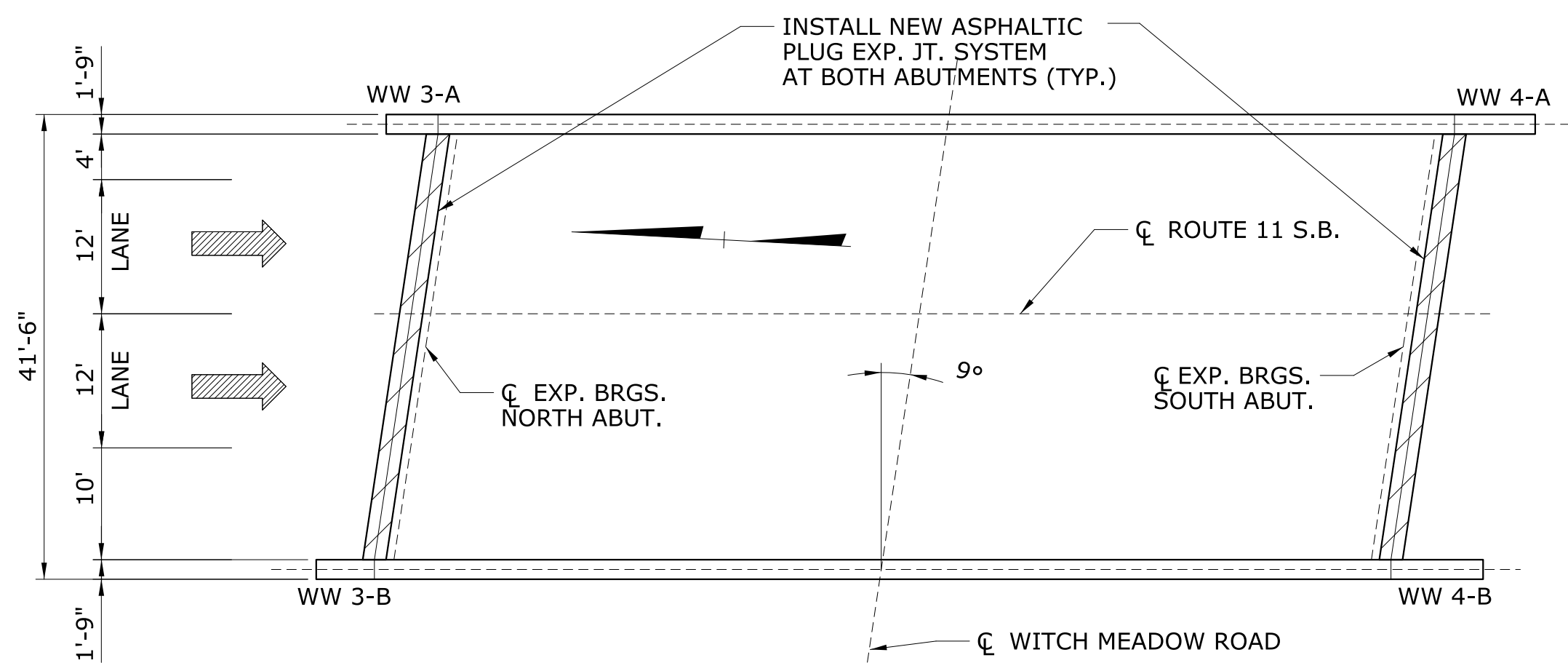
				<div>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</div>	DESIGNER/DRAFTER: <b>SAB/JWP</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>		SIGNATURE/BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE: <b>PAVEMENT PRESERVATION ON ROUTE 11</b>	TOWN: <b>SALEM &amp; COLCHESTER</b>	PROJECT NO. <b>28-201</b>
					CHECKED BY: <b>SAB/KVB</b>						DRAWING NO. <b>S-01</b>
											SHEET NO. <b>02.03.01</b>
					SCALE AS NOTED						
REV.	DATE	REVISION DESCRIPTION	SHEET NO.		Plotted Date: 8/12/2014					Filename: ...\\01200091.SB_S-02.dgn	



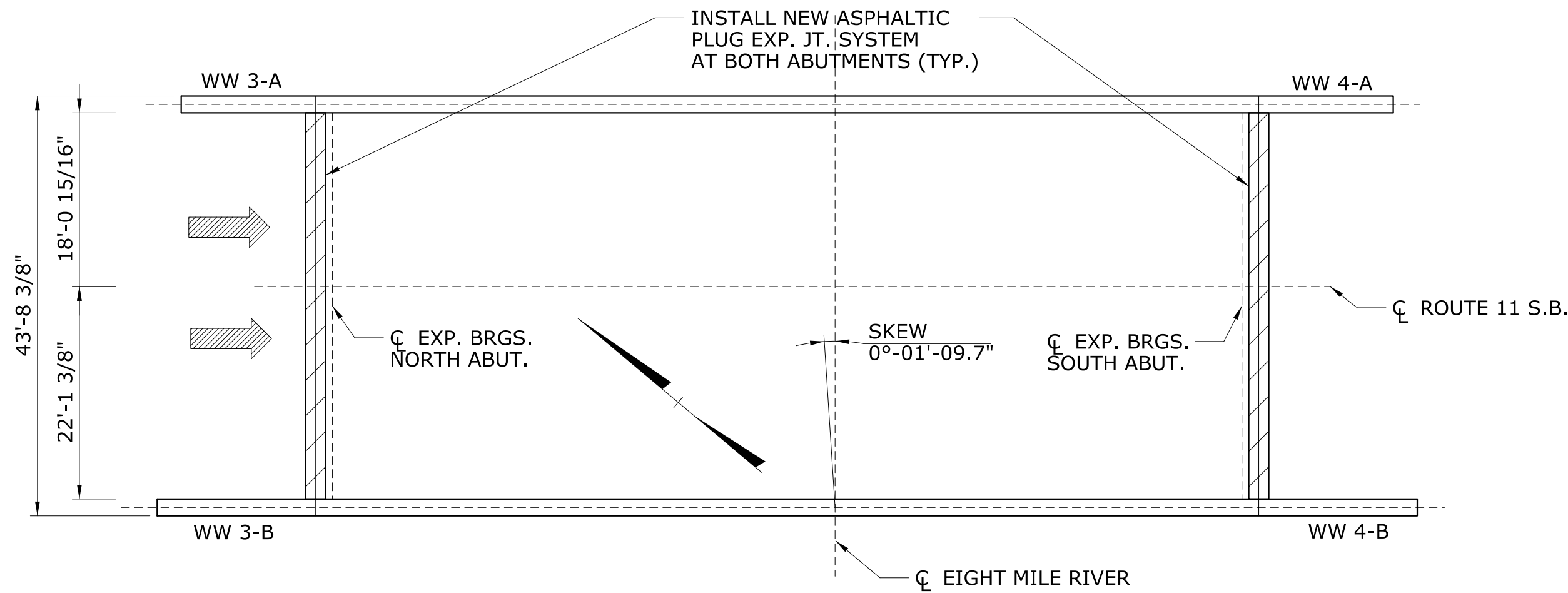
GENERAL PLAN - BRIDGE NO. 02393  
(ROUTE 11 N.B. OVER EIGHT MILE RIVER)  
NOT TO SCALE



GENERAL PLAN - BRIDGE NO. 02415  
(ROUTE 11 N.B. OVER WITCH MEADOW ROAD)  
NOT TO SCALE



GENERAL PLAN - BRIDGE NO. 02416  
(ROUTE 11 S.B. OVER WITCH MEADOW ROAD)  
NOT TO SCALE



GENERAL PLAN - BRIDGE NO. 02394  
(ROUTE 11 S.B. OVER EIGHT MILE RIVER)  
NOT TO SCALE

BRIDGE INFORMATION FOR REPLACEMENT OF EXISTING EXPANSION JOINTS												
BRIDGE NO.		BRIDGE GEOMETRY AND DATA					MILLING AND PAVING DEPTH		DECK JOINT TYPE AND ESTIMATED QUANTITY	JOINT REPLACEMENT DETAIL		
		MILE POINT	NUMBER OF TRAVEL LANES	CURB - CURB WIDTH (FT)	MAXIMUM THERMAL MOVEMENT (IN)	SKEW (DEG)	MILLING OF HMA, DEPTH	PMA S0.5, DEPTH		NORTH ABUTMENT	SOUTH ABUTMENT	PARAPET
02393	N.B.	10.78	2	40.2'	1"	0°	1"	2"	61	DETAIL A	DETAIL A	DETAIL B
02394	S.B.	10.79	2	40.2'	1"	0°	1"	2"	61	DETAIL A	DETAIL A	DETAIL B
02415	N.B.	13.09	2	42'	6/7"	4°	1.5"	1.5"	64	DETAIL A	DETAIL A	DETAIL B
02416	S.B.	13.10	2	38'	6/7"	9°	1.5"	1.5"	58	DETAIL A	DETAIL A	DETAIL B

DETAIL A IS ON DRAWING S-03  
DETAIL B IS ON DRAWING S-04

#### ASPHALTIC PLUG EXPANSION JOINT SYSTEM NOTES

- NO BRIDGING PLATE SHALL BE USED AT THE FOLLOWING LOCATIONS:
  - JOINT BETWEEN A DECK END AND A CONCRETE APPROACH PAVEMENT
  - WHERE A BRIDGE DECK END MEETS A BITUMINOUS APPROACH PAVEMENT
- SAW-CUTS MADE 3' EACH SIDE OF CENTERLINE OF JOINT WILL BE PAID AS "CUT BITUMINOUS CONCRETE PAVEMENT".
- THE REMOVAL OF ALL EXISTING JOINT SYSTEMS AND BITUMINOUS CONCRETE WITHIN THE LIMITS SHOWN TO BE INCLUDED FOR PAYMENT UNDER THE ITEM "REMOVAL OF HMA WEARING SURFACE".
- INSTALLATION OF MEMBRANE WITHIN THE LIMITS SHOWN TO BE PAID UNDER THE ITEM, "MEMBRANE WATERPROOFING (SHEET) (TORCH APPLIED)".
- CRACK SEALANT PLACED ALONG VERTICAL FACES OF THE SAW-CUT PAVEMENT TO BE PAID UNDER THE ITEM, "JOINT AND CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT".
- THE FURNISHING AND PLACING OF PMA S0.5 TO BE INCLUDED FOR PAYMENT UNDER THE ITEM "PMA S0.5".
- SAW-CUTTING AND REMOVAL OF PAVEMENT FOR JOINT INSTALLATION TO BE INCLUDED FOR PAYMENT UNDER THE ITEM, "ASPHALTIC PLUG EXPANSION JOINT SYSTEM".
- CLOSED CELL BACKER ROD DIAMETER SHALL BE DETERMINED AFTER MEASURING THE JOINT OPENING. THE ROD SHALL BE 25% LARGER THAN THE JOINT OPENING.
- ASPHALTIC PLUG EXPANSION JOINT SYSTEMS MAY BE INSTALLED ONLY WITHIN THE TEMPERATURE RANGE SPECIFIED IN THE SPECIAL PROVISION "ASPHALTIC PLUG EXPANSION JOINT SYSTEM". REFERENCE TABLE D FOR "BRIDGE SUPERSTRUCTURE SURFACE TEMPERATURE" RANGE IN THE SPECIAL PROVISION
- EXPLORATION OF PAVEMENT THICKNESS AND JOINT LOCATION TO BE INCLUDED IN THE GENERAL COST OF THE ITEM "REMOVAL OF HMA WEARING SURFACE".

#### QUANTITIES

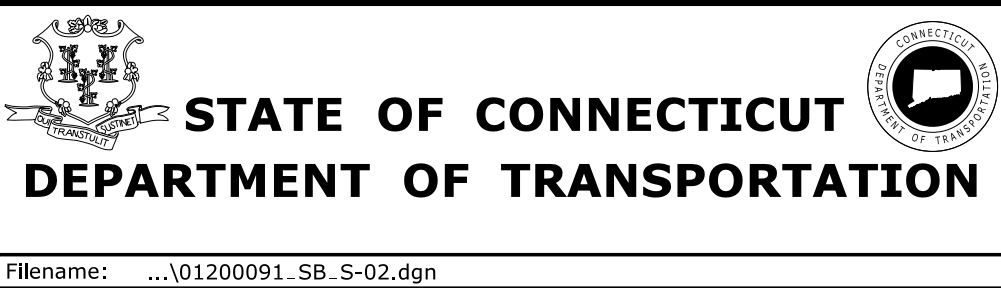
ITEM	UNIT	TOTAL AMOUNT	AMOUNT N.B.	AMOUNT S.B.
ASPHALTIC PLUG EXPANSION JOINT SYSTEM	C.F.	244	125	119
REMOVAL OF HMA WEARING SURFACE	S.Y.	215	110	105
CUT BITUMINOUS CONCRETE PAVEMENT	L.F.	346	177	169
MEMBRANE WATERPROOFING (SHEET) (TORCH-APPLIED)	S.Y.	82	42	40
JOINT AND CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT	L.F.	322	165	157
PMA S0.5	TON	39	20	19

-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/12/2014

DESIGNER/DRAFTER:  
**SAB/JWP**  
CHECKED BY:  
**SAB/KVB**  
SCALE AS NOTED

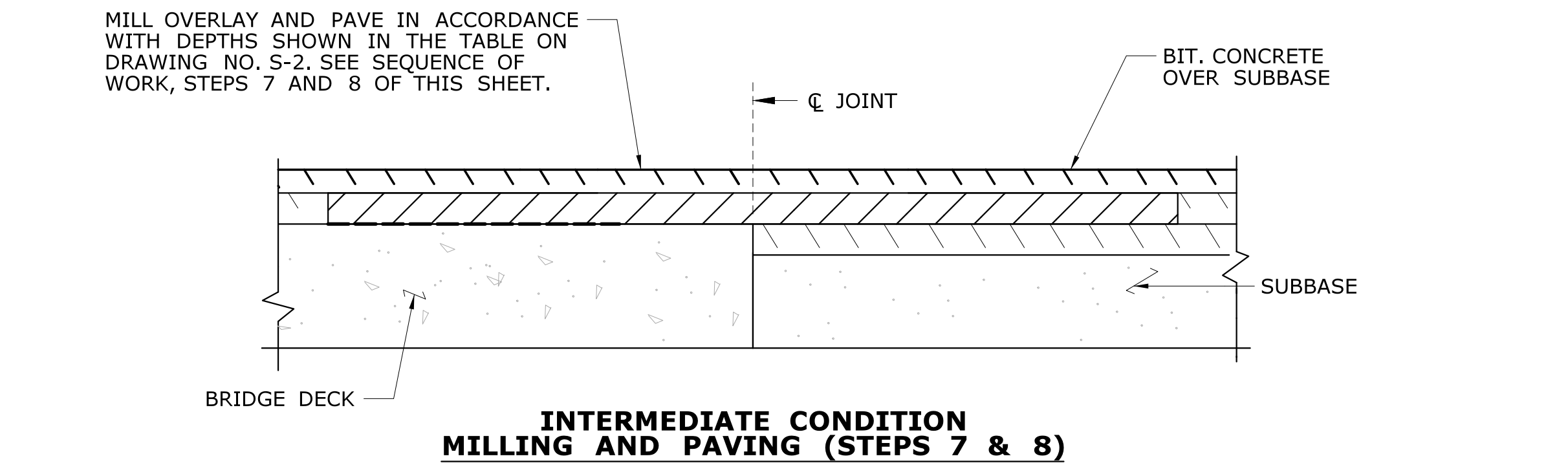
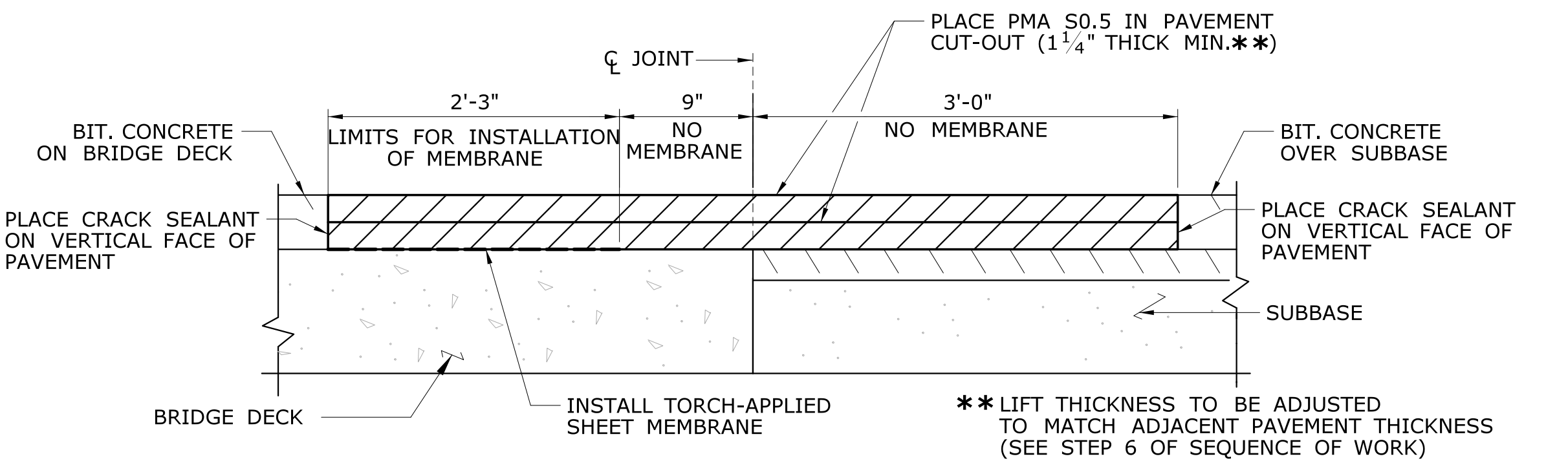
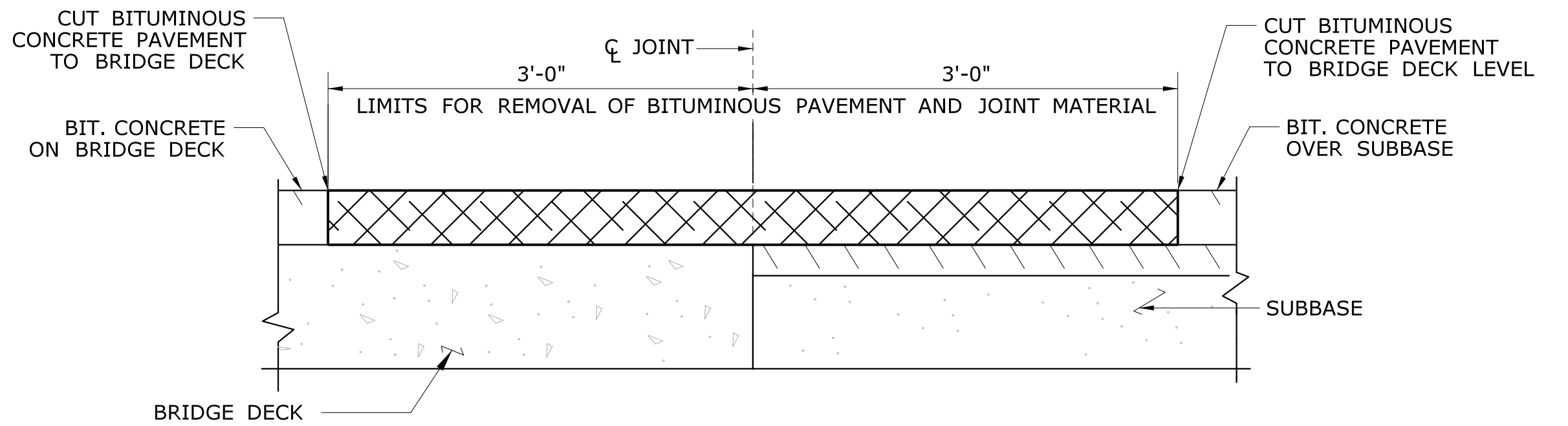
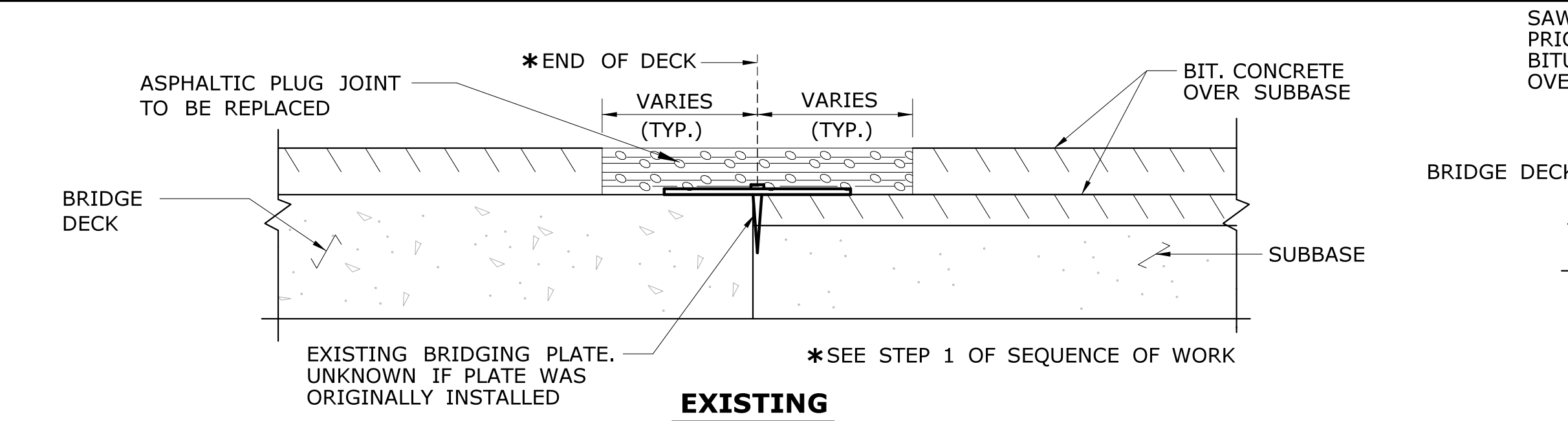


SIGNATURE/  
BLOCK:  
**OFFICE OF ENGINEERING**  
APPROVED BY:

PROJECT TITLE:  
**PAVEMENT PRESERVATION  
ON ROUTE 11**

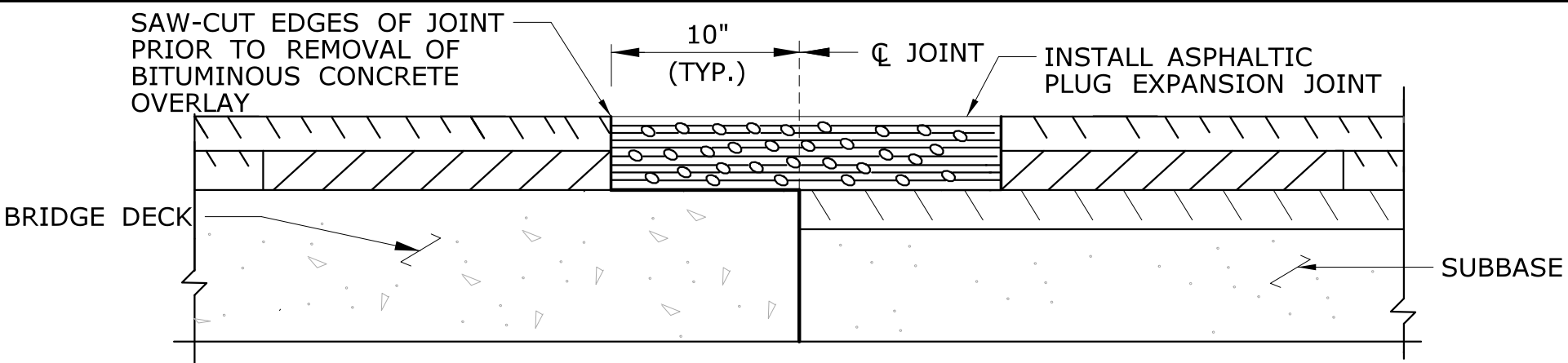
TOWN:  
**SALEM & COLCHESTER**  
DRAWING TITLE:  
**BRIDGE DECK JOINTS  
PLAN AND  
INFORMATION CHART**

PROJECT NO.  
**28-201**  
DRAWING NO.  
**S-02**  
SHEET NO.  
**02.03.02**



**DETAIL A - PROPOSED ASPHALTIC PLUG JOINT WITHOUT BRIDGING PLATE**

N.T.S.



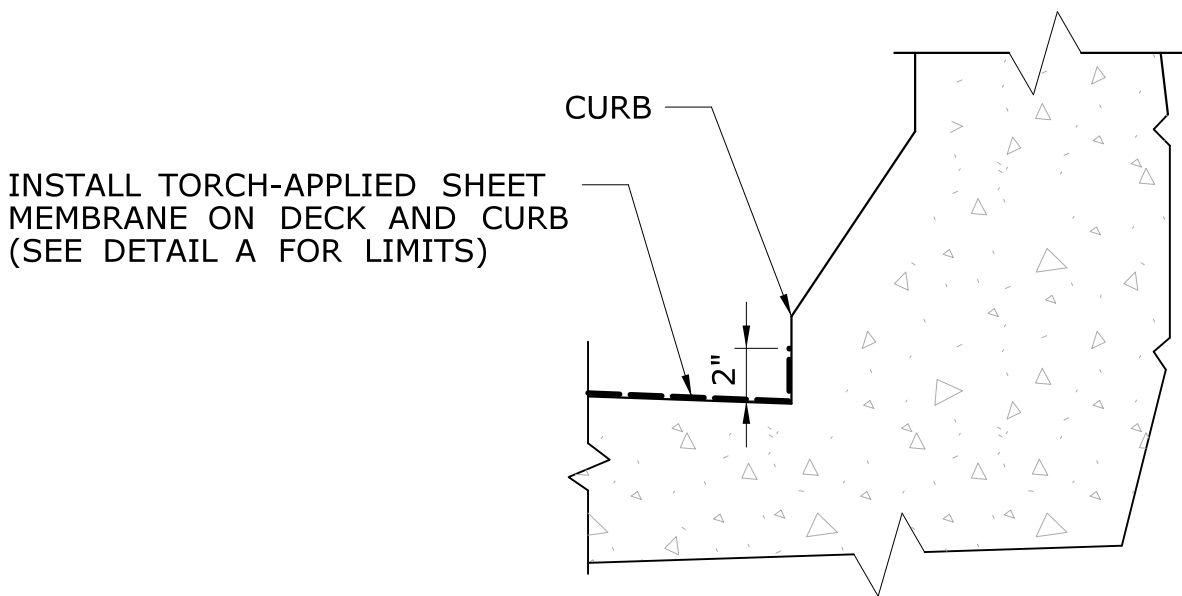
**SEQUENCE OF WORK**

- STEP 1: CONTRACTOR SHALL PERFORM AN EXPLORATION AT THE ROADWAY CENTERLINE TO DETERMINE THE DEPTH OF PAVEMENT AND THE LOCATION OF THE DECK END (CENTERLINE OF PROPOSED JOINT) BEFORE PROCEEDING TO STEP 2.
- STEP 2: SAW-CUT BITUMINOUS PAVEMENT ON BOTH SIDES OF EXISTING JOINT FOR PAVEMENT CUT-OUT. EACH SAW CUT LINE SHALL BE 3' FROM THE CENTERLINE OF THE EXISTING JOINT. SAW-CUT SHALL NOT DAMAGE EXISTING DECK.
- STEP 3: REMOVE EXISTING PAVEMENT MATERIAL AND JOINT MATERIAL WITHIN THE LIMITS SHOWN.
- STEP 4: INSTALL MEMBRANE TO THE TOP OF DECK WITHIN THE LIMITS SHOWN.
- STEP 5: PLACE CRACK SEALANT ON VERTICAL EDGE OF PAVEMENT ALONG SAW-CUT LINES.
- STEP 6: PLACE PMA S0.5 IN THE JOINT CUTOUT. REFER TO THE REQUIREMENTS OF PAVEMENT REPLACEMENT AT ASPHALTIC PLUG JOINTS (APJ) IN THIS SHEET.
- STEP 7: MILL ROADWAY AND BRIDGE PAVEMENT TO SPECIFIED DEPTHS.
- STEP 8: PAVE TOP COURSE ON ROADWAY AND BRIDGE.
- STEP 9: CUT PAVEMENT FULL DEPTH, 10" EACH SIDE OF CENTER OF JOINT, AND REMOVE ALL PAVEMENT MATERIAL BETWEEN SAW-CUTS.
- STEP 10: INSTALL PROPOSED ASPHALTIC PLUG EXPANSION JOINT SYSTEM.

**PAVEMENT REPLACEMENT AT ASPHALTIC PLUG JOINTS (APJ):**

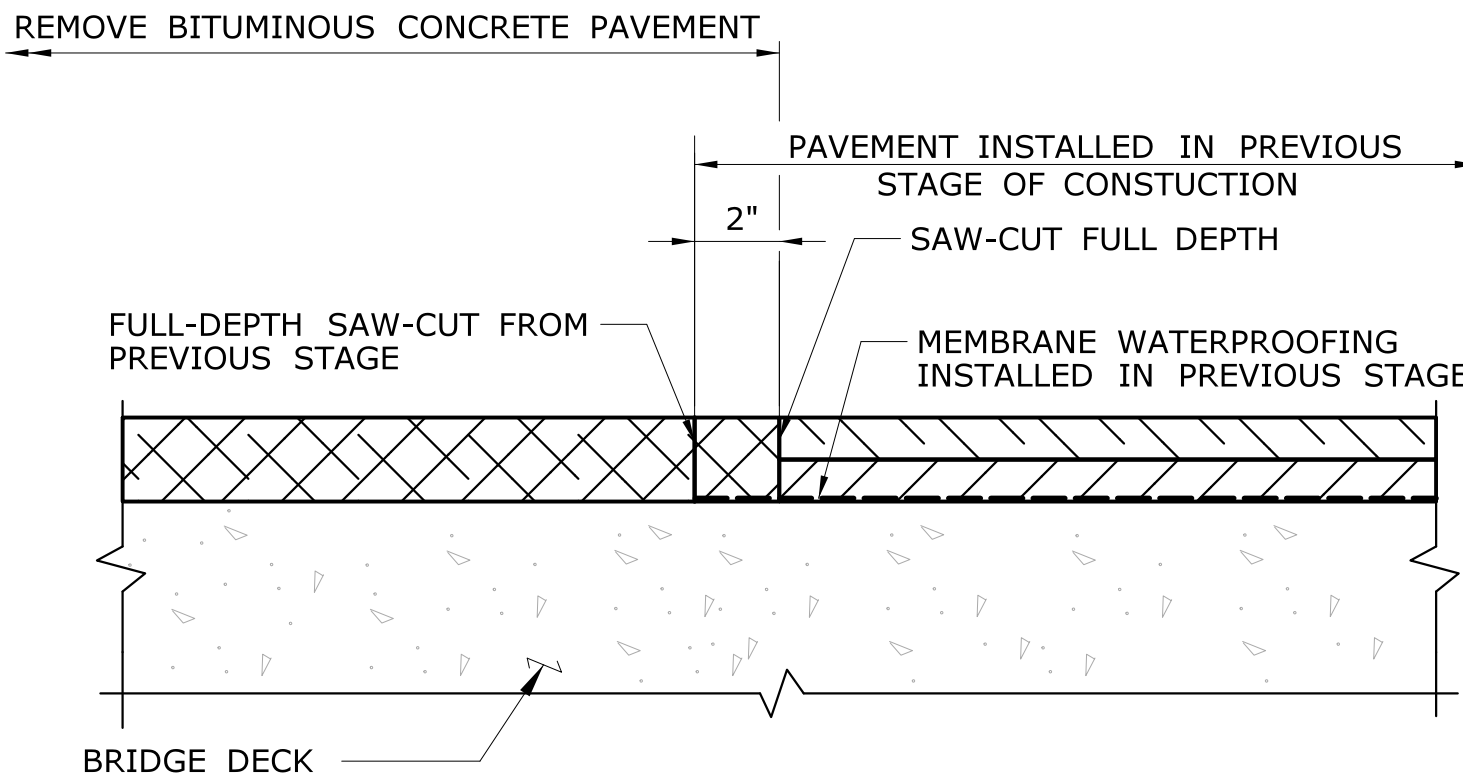
- THE REQUIREMENTS OF SPECIAL PROVISION SECTION 4.06 SHALL BE MET EXCEPT IN LIEU OF DENSITY TESTING, THE METHODS DESCRIBED BELOW SHALL BE FOLLOWED TO ASSURE PROPER COMPACTION.
- TOP LIFT MUST BE UNIFORM THICKNESS; INTERMEDIATE LIFTS CAN BE PLACED AT 1 1/4" TO 2 1/2" COMPACTED.
- REQUIREMENTS FOR PROPER COMPACTION:
  - MINIMUM 265° F DELIVERY TEMPERATURE OF MATERIAL. PLACE AND SPREAD MATERIAL BEFORE IT COOLS TO 260° F. MATERIAL NOT PLACED BEFORE FALLING BELOW TEMPERATURE REQUIREMENT WILL BE REJECTED.
  - COMPACT NON-SURFACE LIFTS WITH VIBRATORY PLATE COMPACTOR MEETING THE FOLLOWING REQUIREMENTS:
    - SHALL BE DESIGNED TO COMPACT BITUMINOUS CONCRETE
    - SHALL BE EQUIPPED WITH A WATER TANK
    - MINIMUM CENTRIFUGAL FORCE OF 3200 LBS
    - MAXIMUM CENTRIFUGAL FORCE OF 6000 LBS
    - WEIGH A MINIMUM OF 160 LBS (WITHOUT WATER)
    - MINIMUM 4400 VIBRATIONS PER MINUTE
  - COMPACT TOP LIFT WITH 3 1/2 TO 4 1/2 TON DOUBLE DRUM ROLLER, DESIGNED TO COMPACT BITUMINOUS CONCRETE.
  - PROVIDE NUMBER OF PASSES BASED ON LIFT THICKNESS AS FOLLOWS:

LIFT THICKNESS (INCHES)	NUMBER OF PASSES
1 1/4 TO 1 1/2	8
1 1/2 TO 2	10
2 TO 2 1/2	12
  - ADDITIONAL COMPACTION EQUIPMENT MAY BE REQUIRED TO COMPLETE LIFT COMPACTION BEFORE MATERIAL COOLS TO 180° F.
  - CORNERS OR OTHER AREAS INACCESSIBLE TO PLATE TAMPER SHALL BE COMPACTED WITH A HAND TAMPER (APPROVED FOR USE BY THE ENGINEER) A MINIMUM OF 20 TIMES BEFORE MATERIAL COOLS TO 180° F.
- THE CONTRACTOR MAY REQUEST TO USE ALTERNATE EQUIPMENT BY SUBMITTING A SUPPLEMENT TO THEIR QC PLAN. THE EQUIPMENT AND PROCEDURES MUST BE APPROVED BY THE ENGINEER PRIOR TO USE.
- IF THESE METHODS ARE NOT PERFORMED TO THE SATISFACTION OF THE ENGINEER, DENSITY VERIFICATION MAY BE REQUIRED WHEREIN THE CONTRACTOR SHALL PROVIDE DENSITY TESTING WITH A QC NUCLEAR DENSITY GAUGE OR COLLECT CORE SAMPLES AS SPECIFIED IN SECTION 4.06.



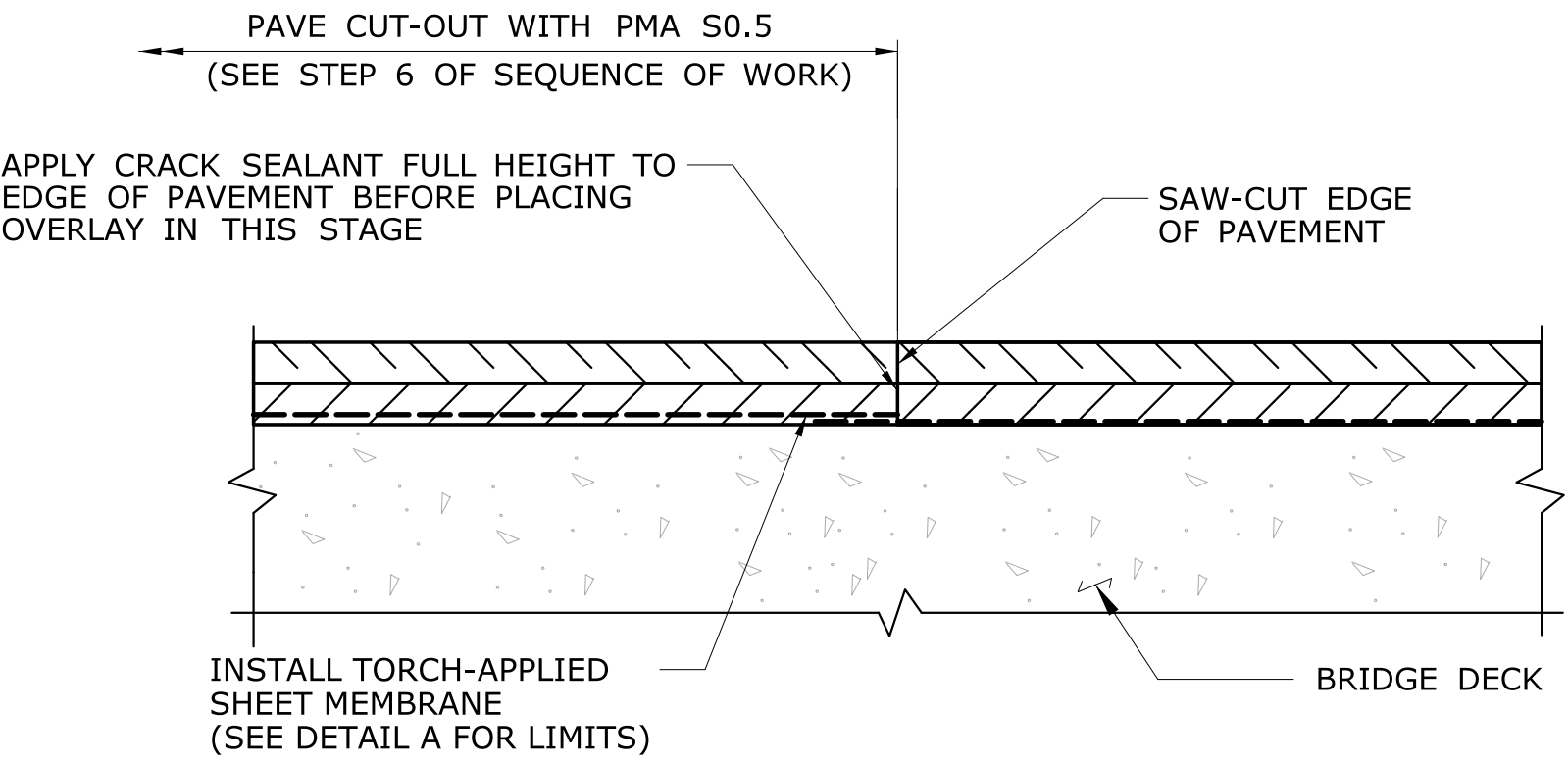
**SECTION AT GUTTERLINE AT PAVEMENT CUT OUT**

N.T.S.




**SECTION - INITIAL LONGITUDINAL STAGE CONSTRUCTION JOINT IN PAVEMENT CUTOUT**

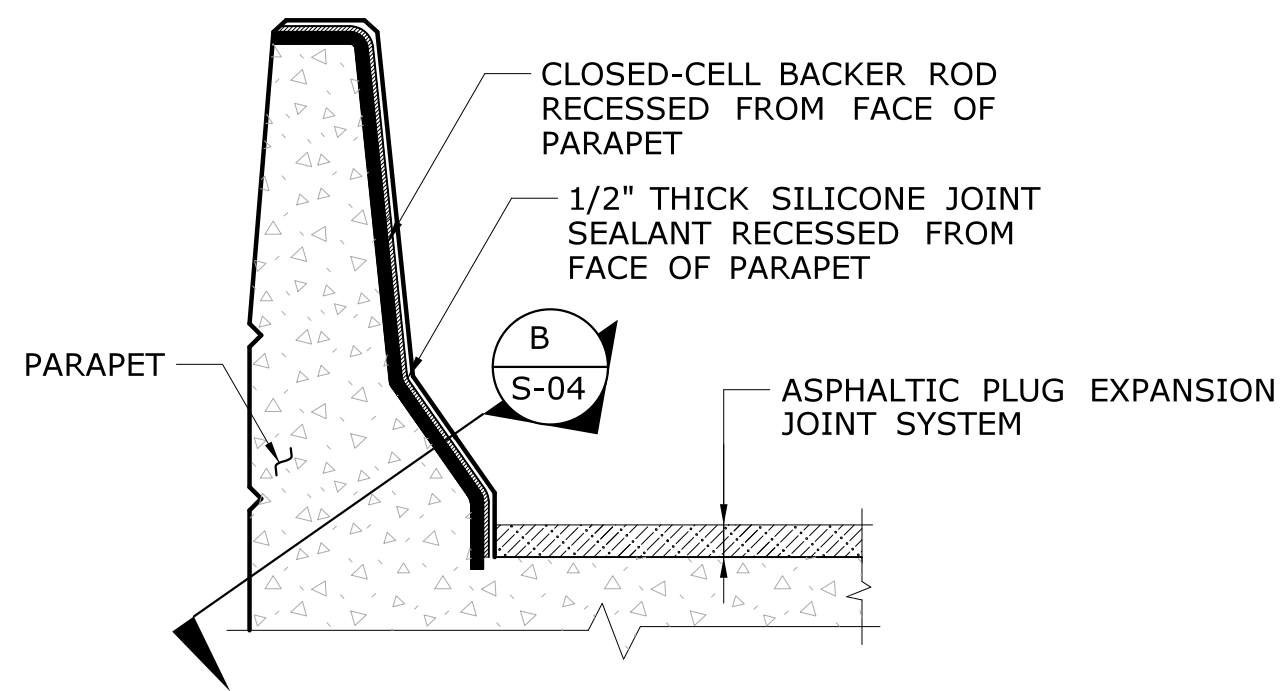
N.T.S.



**SECTION - FINAL LONGITUDINAL STAGE CONSTRUCTION JOINT IN PAVEMENT CUTOUT**

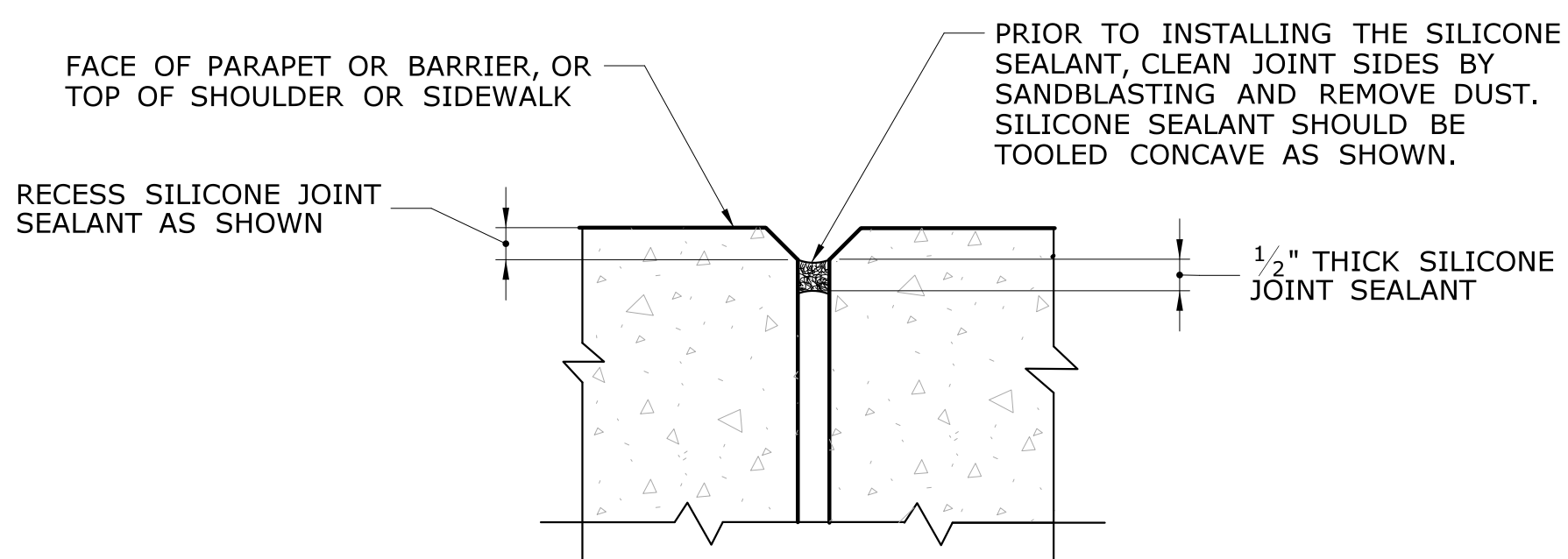
N.T.S.

-			-	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>SAB/JWP</b> CHECKED BY: <b>SAB/KVB</b>  SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>  Filename: ...\\01200091_SB_S-02.dgn	SIGNATURE/ BLOCK:  <b>OFFICE OF ENGINEERING</b>  APPROVED BY:	PROJECT TITLE:  <b>PAVEMENT PRESERVATION ON ROUTE 11</b>	TOWN: <b>SALEM &amp; COLCHESTER</b> DRAWING TITLE: <b>ASPHALTIC PLUG JOINT DETAILS</b>	PROJECT NO. <b>28-201</b> DRAWING NO. <b>S-03</b> SHEET NO. <b>02.03.03</b>
-	-	-	-							
-	-	-	-							
-	-	-	-							
-	-	-	-							
-	-	-	-							
REV.	DATE	REVISION	DESCRIPTION	SHEET NO.	Plotted Date: 8/12/2014					



**JOINT TREATMENT AT PARAPET**

NOT TO SCALE




**SECTION THROUGH PARAPET JOINT**

NOT TO SCALE

**SILICONE JOINT SEALANT AND BACKER ROD DETAILS**

**NOTE:**

PRIOR TO INSTALLING THE NEW BACKER ROD AND SILICONE JOINT SEALANT, REMOVE EXISTING JOINT MATERIAL. CLEAN JOINT SIDES BY SANDBLASTING. DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM".

						DESIGNER/DRAFTER: <b>SAB/JWP</b>		 <b>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</b>		SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>		PROJECT TITLE: <b>PAVEMENT PRESERVATION ON ROUTE 11</b>		TOWN: <b>SALEM &amp; COLCHESTER</b>		PROJECT NO. <b>28-201</b>	
						CHECKED BY: <b>SAB/KVB</b>				APPROVED BY:				DRAWING TITLE: <b>PARAPET JOINT DETAILS</b>		DRAWING NO. <b>S-04</b>	
						SCALE AS NOTED										SHEET NO. <b>02.03.04</b>	
REV. DATE		REVISION DESCRIPTION		SHEET NO.		Plotted Date: 8/12/2014				Filename: ...\\01200091.SB_S-02.dgn							